SANTA CRUZ BIOTECHNOLOGY, INC.

8-OHdG (F-12): sc-393870

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DNA or RNA damage can hinder the ability of a cell to carry out its function and can significantly increase the likelihood of tumor formation. One of the causes of damaged DNA and RNA is oxidation of the bases. 8-hydroxy-2'-deoxyguanosine, 8-hydroxyguanine (8-OHdG) and 8-hydroxyguanosine are all markers of oxidative damage to RNA and DNA. 8-hydroxy-2'-deoxyguanosine is produced by reactive oxygen and nitrogen species, including hydroxyl radical and peroxynitrite. 8-hydroxyguanine is one of the major base lesions involved in mutagenesis and is caused by ionizing radiation and radiomimetic agents. 8-hydroxyguanosine induces a transversion of G to T in DNA, which may be mutagenic. Markers of DNA and RNA damage are useful research tools when studying the effects of this type of damage.

REFERENCES

1. Musarrat, J., et al. 1996. Prognostic and aetiological relevance of 8-hydroxyguanosine in human breast carcinogenesis. Eur. J. Cancer 32A: 1209-1214.
2. Parker, A.R., et al. 2002. 8-hydroxyguanosine repair is defective in some microsatellite stable colorectal cancer cells. Cancer Res. 62: 7230-7233.
3. Abe, T., et al. 2002. Alteration of 8-hydroxyguanosine concentrations in the cerebrospinal fluid and serum from patients with Parkinson's disease. Neurosci. Lett. 336: 105-108.
4. Winter, D.B., et al. 2003. Normal somatic hypermutation of Ig genes in the absence of 8-hydroxyguanine-DNA glycosylase. J. Immunol. 170: 5558-5562.
5. Russo, M.T., et al. 2004. Accumulation of the oxidative base lesion 8-hydroxyguanine in DNA of tumor-prone mice defective in both the Myh and Ogg1 DNA glycosylases. Cancer Res. 64: 4411-4414.

SOURCE

8-OHdG (F-12) is a mouse monoclonal antibody raised against 8-hydroxy-2'-deoxyguanosine (8-OHdG)-BCP conjugate of synthetic origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

8-OHdG (F-12) is recommended for detection of 8-OHdG (8-hydroxy-2'-deoxyguanosine) by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

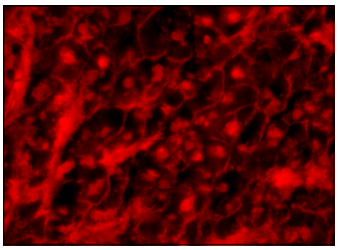
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 2) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



8-OHdG (F-12): sc-393870. Immunofluorescence staining of formalin-fixed, paraffin-embedded red snapper liver tissue showing 8-OHdG staining in hepatocytes. Kindly provided by Saydur Rahman, Ph.D., Marine Science Institute, University of Texas.

SELECT PRODUCT CITATIONS

1. Sohn, E., et al. 2015. Extract of rhizoma *Polygonum cuspidatum* reduces early renal podocyte injury in streptozotocin-induced diabetic rats and its active compound emodin inhibits methylglyoxal-mediated glycation of proteins. Mol. Med. Rep. 12: 5837-5845.
2. Sukumaran, V., et al. 2017. Azilsartan ameliorates diabetic cardiomyopathy in young db/db mice through the modulation of ACE-2/ANG 1-7/Mas receptor cascade. Biochem. Pharmacol. 144: 90-99.
3. Avola, R., et al. 2018. Blue light induces down-regulation of aquaporin 1, 3, and 9 in human keratinocytes. Cells 7: 197.
4. Kasnak, G., et al. 2018. Elevated levels of 8-OHdG and PARK7/DJ-1 in peri-implantitis mucosa. Clin. Implant Dent. Relat. Res. 20: 574-582.
5. Avola, R., et al. 2019. Hydroxytyrosol from olive fruits prevents blue-light-induced damage in human keratinocytes and fibroblasts. J. Cell. Physiol. 234: 9065-9076.
6. Avola, R., et al. 2020. Oregano *(Origanum vulgare L.)* essential oil provides anti-inflammatory activity and facilitates wound healing in a human keratinocytes cell model. Food Chem. Toxicol. 144: 111586.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CONJUGATES

See **8-OHdG (E-8): sc-393871** for 8-OHdG antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.